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Published in:
Stress and Health

Publication date:
2007

Document Version
Publisher's PDF, also known as Version of record

Stress and Health

Stress and Health **23**: 121–130 (2007)
Published online 19 January 2007 in Wiley InterScience (www.interscience.wiley.com). **DOI:** 10.1002/smi.1129
Received 12 May 2006; Accepted 6 October 2006

Which constructs can predict emotional exhaustion in a working population? A study into its determinants

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Summary
The main objective of this study was to examine the psychosocial stress model developed by Taylor and Aspinwall with emotional exhaustion as the outcome variable. Respondents, 409 men and 346 women, who had a paid job for at least 20 hours per week, completed questionnaires concerning demographic variables, personality, temperament, work pressure, workload, perceived social support, appraisal, coping, and emotional exhaustion. Structural equation analyses provided only partial support for the validity of the model. First, on theoretical and statistical grounds, one more path linking external resources to social support was added. Second, contrary to expectations, coping styles did not predict emotional exhaustion. To conclude, when coping is measured retrospectively, it does not add to our understanding of emotional exhaustion. It is suggested that future studies should be longitudinal and include objective measures of stressors and psychosocial health outcomes in addition to self-reports. Copyright © 2007 John Wiley & Sons, Ltd.

Key Words
emotional exhaustion; structural equation modelling; personality; stress; work

Introduction

Working individuals run a high risk to develop burnout, which is characterized by depersonalization, reduced personal competence and emotional exhaustion, its core component (Lee & Ashforth, 1993; Leiter, 1993). In the Netherlands, about 30 per cent of work disability benefit recipients are classified as occupationally disabled on mental grounds (Houtman, 1999), mainly burnout (Van Eck, 1991). The objective of the present research was to study emotional exhaustion using the theoretical framework of Taylor and Aspinwall (1996).

On the basis of empirical results, Taylor and Aspinwall (1996) developed a more extended, general framework concerning processes that lead to certain health outcomes, integrating multiple perspectives on psychosocial stress processes. Taylor and Aspinwall (1996) combined genetic factors, stable individual differences, stress vulnerability and coping in one model. As Figure 1 shows, the model includes external resources,

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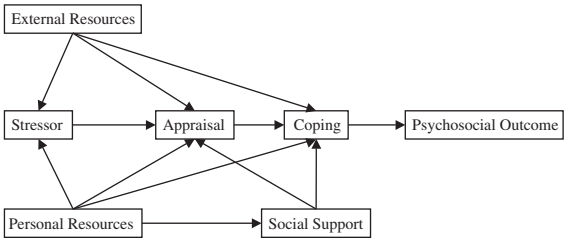

Figure 1. Taylor and Aspinwall model.

personality, stressors, appraisal, social support and coping. In the present study, we focused on a specific psychosocial outcome, emotional exhaustion. Taylor and Aspinwall (1996) define external resources as resources that comprise aspects of the individual's environment, shaping the demands and affordances, and opportunities, of the situation. In addition to standard external resources, such as time and money, a wide set of conditions, ranging from the physical environment to social roles and other aspects of the individual's place in social groups, are considered external resources. External resources determine the kinds of stressors to which one is exposed, in the present study work stress, as well as appraisal and coping processes (see Figure 1).

The Taylor and Aspinwall (1996) model is based on an overview of a broad set of studies containing a wide variety of external and personal resources. The authors intended the model to be applicable to a general population and therefore included a large, somewhat arbitrary selection of external and personal resources. Because factors like sex, age, and family situation, reflecting social roles and environmental demands (see e.g. Gianakos, 2000), are claimed to influence the kind of stressor (Pearlin, 1989), appraisal of the event (Brown & Fielding, 1993; Hunter, 1999; Sheets, Gorenflo, & Forney, 1993), and preferred coping styles (Endler & Parker, 1994; Griffith, Dubow, & Ippolito, 2000), they were included as external resources. As we study a working population, we added type of employment contract and number of working hours per week.

Personal resources (personality factors) affect exposure to, and disengagement from, situations, as well as appraisal and coping. For instance, Argyle, Furhnham, and Graham (1981) argued that individuals seek out certain social situations in accordance with their personality and needs. Extraverts select stimulating social situations, while neurotics avoid competitive and social interactive situations (Eysenck, 1973). Taylor and Aspinwall (1996) suggested that the following personality factors are relevant: hardiness, optimism, psychological control, self-esteem, sense of humor and conscientiousness. In the present study of a working population, we used a more systematic set of basic personality characteristics with high relevance for work stress studies (Parkes, 1994) which are known to affect the experience of stress and coping: hardiness (Kobasa, 1979), temperament (Strelau, Angleitner & Newberry, 1999), the Big Five (De Vries & Van Heck, 2002), and Type A behaviour pattern (Jenkins, Zyzanski & Rosenman, 1979). Personal resources may also influence the availability, mobilization and maintenance of social support. Social support, in turn, may affect coping indirectly by appraisal processes and directly through the provision of information and functional assistance. Finally, the effects of personal and external resources, stressor, appraisal and social support on psychosocial outcomes are mediated by ways of coping with stress (see e.g. Frese, 1986). The model of Taylor and Aspinwall (1996) incorporates the transactional model of Lazarus and Folkman (1984) that includes primary appraisal of the stressor and secondary appraisal of the coping mechanisms available. In summary, most of the relationships depicted in the model of Taylor and Aspinwall (1996) have been empirically established (e.g. Gianakos, 2000; Griffith et al., 2000; Hunter, 1999; Pearlin, 1989). Surprisingly, the complete model has not yet been systematically tested. Because the paths in the model have an empirical basis, we did not formulate specific hypotheses. In the present study, the complete model was tested in a working sample.

Materials and methods

Participants

The respondents [$N = 765$, $M = 40.3$ years, Standard deviation (SD) = 9.7] were invited to participate through random telephone calls. Only respondents working at least 20 hours per week were selected for participation. In total, 409 men ($M = 41$ years, SD = 9.5 years, range = 20–63 years) and 346 women ($M = 39$ years, SD = 9.7 years, range = 18–64) participated. Gender was unknown for 10 respondents. Data were collected in 1998 in the Netherlands. The branch that the

DOI: 10.1002/smi

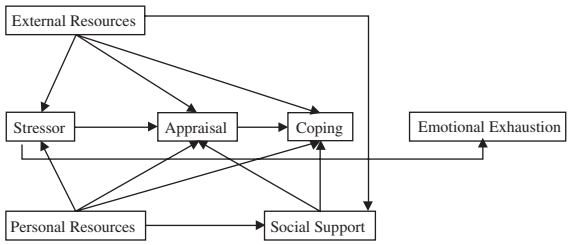

Figure 2. Revised Taylor and Aspinwall model.

participants worked in were: industry/agriculture (n = 79), construction (n = 63), trade/repairs/hotels (n = 92), transport (n = 23), financial services (n = 94), care sector (n = 148), other services (n = 98), public sector (government) (n = 77), education (n = 63), and unknown (n = 28). Twenty-nine per cent (n = 218) were single. Forty per cent (n = 325) had a college education.

Measures

External resources. Gender, age, having children, type of employment contract, marital status, number of working hours per week, and self-reported physical illness at time of study were reported. Concerning illness, the question was asked: 'Were you ill the last week?' People (n = 69) who were ill indicated widely varying health problems like a common cold (n = 13) or tension (n = 10). Others reported to experience lower back pain (n = 1), asthma (n = 1) or some other health problem. They were not excluded, because their illness did not result in absenteeism.

Personal resources. The Five-Factor Personality Inventory (Hendriks, Hofstee, & De Raad, 1999) was used to assess Extraversion, Agreeableness, Conscientiousness, Emotional Stability, and Openness to Experience/Autonomy. Each subscale leads to a summated score of 10 positively and 10 negatively phrased items with a five-point response scale ranging from 1, not at all applicable, to 5, totally applicable. Reliability and validity are good (Hendriks et al., 1999). In the present study, internal consistencies were 0.91 (Extraversion), 0.80 (Agreeableness), 0.87 (Conscientiousness), 0.91 (Emotional Stability), and 0.86 (Openness to Experience/Autonomy).

To measure Hardiness, we used the 50-item Hardiness scale (Maddi, 1997). It measures commitment to oneself and work, personal control and the perception that change represents challenge and opportunity for growth. The rating scale ranged from 0, *not at all true*, to 3, *completely true*. A previous study has demonstrated adequate internal consistency for the total score (Bernas & Major, 2000). Internal consistency (Cronbach's alphas) for Hardiness Total was 0.80.

The Pavlov Temperament Survey (PTS, Strelau, Angleitner, & Newberry, 1999) measures temperament characteristics. The PTS contains 60 items designed to measure Strength of Excitation (SE), Strength of Inhibition (SI) and Mobility of Nervous Processes (MO). SE refers to the functional capacity of the nervous system. SI refers to conditioned inhibition. MO can be understood as the ability to react quickly and adequately to environmental changes. Each subscale contains 20 items with a four-point Likert scale, ranging from 1, *completely uncharacteristic*, to 4, *completely characteristic*. The American English version had acceptable psychometric characteristics (Newberry et al., 1997). In a Dutch study, internal consistency of the scales was good (Van Heck, De Raad, & Vingerhoets, 1993). Cronbach's alpha coefficients were 0.84, 0.77, and 0.89 for SE, SI and MO, respectively.

The 24-item version of the Jenkins Activity Scale (JAS, Jenkins, Zyzanski, & Rosenman, 1979) yields a score for overall Type A. Scores at the positive end of the scale indicate Type A behaviour. The rating scale is different for almost each question. Reliability and content validity are good (Appels, Mulder, & Van Houtem, 1995; Jenkins et al., 1979). In the present study, Cronbach's alpha was 0.69.

Stressor. Work Pressure was measured by an 11-item subscale of a Dutch questionnaire on psychosocial job demands [De Vragenlijst Beleving en Beoordeling van de Arbeid (VBBA), Van Veldhoven & Meijman, 1994]. The scale uses a rating scale ranging from 1, *always*, to 4, *never*. Previous research demonstrated the validity of the VBBA scales (e.g. De Croon, Sluiter, Blonk, Broersen, & Frings-Dresen, 2004). Internal consistency in the present study was 0.83. A subscale from the Trier Inventory for the Assessment of Chronic Stress (Schulz & Schlotz, 1999) measured workload. The responses are given on a five-point rating scale, ranging from 1, *never*, to 5, *very often*. Its internal consistency and construct validity were good. In the present study, Cronbach's alpha was 0.87.

Table I. Correlations between the 25 variables.

	1	2	3	4	5	6	7	8	9	10	11	12
1. Gender	—	–0.13***	–0.02	0.01	0.15***	–0.44***	0.02	0.01	0.19***	0.03	–0.24***	–0.11**
2. Age		—	0.46***	–0.15***	–0.10**	–0.05	–0.01	–0.13***	0.09	0.17***	0.01	0.01
3. Child			—	–0.16***	–0.36***	–0.13***	–0.05	0.01	0.08	0.12	0.03	0.02
4. Employm				—	0.12**	–0.05	0.02	0.03	0.01	–0.11	–0.06	–0.02
5. Mar st					—	–0.05	–0.01	–0.15***	0.06	–0.09	–0.16***	–0.06
6. Work h						—	–0.04	0.04	–0.13***	0.01	0.17***	0.20***
7. Being ill							—	–0.06	0.01	–0.01	–0.13***	–0.08
8. F1								—	–0.06	0.07	0.52***	0.54***
9. F2									—	0.32***	0.06	–0.18***
10. F3										—	0.21***	0.10
11. F4											—	0.62***
12. F5												—
13. SI												
14. SE												
15. MO												
16. Hardy												
17. Type A												
18. Work Pr												
19. Work L												
20. Soc S												
21. Appr												
22. Avoi												
23. Task												
24. Emot												
25. Exh												

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Employm: Type of employment contract; Mar st: Marital status; Work h: Number of work hours; F1: Extraversion; F2: Agreeableness; F3: Conscientiousness; F4: Emotional Stability; F5: Openness/Autonomy; SE: Strength of Excitation; SI: Strength of Inhibition; MO: Mobility of Nervous Processes; Hardy: Hardiness; Work Pr: Work Pressure; Work L: Workload; Soc S: Social Support; Appr: Appraisal; Avoi: Avoidance-oriented coping; Task: Task-oriented coping; Emot: Emotion-oriented coping; Exh: Emotional exhaustion.

Appraisal. The 14-item Perceived Stress Scale (PSS, Cohen, Kamarck, & Mermelstein, 1983) measures appraisal. The 14 items assess the degree to which situations within a person's life are in general appraised as stressful. Responses are given on a four-point scale ranging from 1, *never*, to 4, *always*. The PSS has good reliability and validity (Cohen et al., 1983; Ng & Jeffery, 2003). In the present study, the internal consistency was 0.87.

Social support. The 12-item version of the Perceived Social Support Scale-Revised (Blumenthal et al., 1987) assesses the general perception of social support of family, friends and 'a special person'. The item's rating scale varies from 1, *very strongly disagree*, to 7, *very strongly agree*. Good reliability and validity have been demonstrated (Blumenthal et al., 1987; Elovainio et al., 2004). In the present study, the reliability coefficient was 0.90.

Coping. The 48-item Coping Inventory for Stressful Situations (CISS, De Ridder & Van Heck, 1998; Endler & Parker, 1994) assesses three basic coping dimensions: Task-oriented coping (coping by altering the situation), Emotion-oriented coping (coping by regulating emotional distress), and Avoidance-oriented coping (coping by distraction or seeking other people's company). Participants are asked how they would react in general to a problematic situation. The rating scale ranges from 1, *not at all*, to 5, *very much*. The CISS proved to be reliable in healthy populations (e.g. Cook & Heppner, 1997). In the present study, Cronbach's alpha's were 0.86, 0.87, and 0.82, respectively.

Health outcome. The Emotional Exhaustion (EE) scale of the Dutch version (Schaufeli & Van Dierendonck, 1994) of the Maslach Burnout Inventory (Maslach & Jackson, 1986) was used. This scale concerns the work-specific extreme fatigue component of burnout. The EE scale is the summed score of five items, each with a seven-point rating scale ranging from 0, *never*, to 6, *always*. Reliability and validity of this subscale is good (Schaufeli, Bakker, Hoogduin, Schaap, &

DOI: 10.1002/smi

13	14	15	16	17	18	19	20	21	22	23	24	25
–0.10	–0.21***	–0.01	0.13***	0.03	–0.02	0.14	0.19	0.14	0.27	0.06	0.18***	0.04
0.06	–0.12***	–0.08	–0.26***	–0.03	0.06	0.03	–0.24***	0.02	–0.17***	–0.09*	–0.01	0.01
0.09	–0.04	–0.01	–0.10**	0.03	–0.01	0.08*	–0.07*	–0.02	–0.21***	–0.01	–0.02	–0.05
–0.03	0.01	0.02	–0.05	–0.06	–0.11**	–0.06	–0.01	0.04	0.09*	–0.03	–0.02	–0.02
0.01	0.01	–0.07	–0.02	–0.07*	–0.02	0.04	–0.11**	0.12**	0.19***	0.03	0.06	0.04
0.04	0.24***	0.12	0.02	0.14***	0.16***	0.04	–0.10**	–0.10**	–0.15***	0.10**	–0.14***	–0.01
–0.01	–0.08	–0.05	–0.09	0.05	0.05	0.06	0.05	0.11**	0.04	–0.03	0.08**	0.17***
–0.03	0.39***	0.52***	0.32***	0.01	–0.12	–0.20***	0.30***	–0.39***	0.18***	0.18***	–0.36***	–0.33***
0.37***	–0.07	–0.07	–0.13***	–0.36***	–0.07	0.08*	0.05	–0.01	–0.04	–0.01	–0.04	–0.03
0.22***	–0.01	–0.08	–0.11**	–0.06	–0.08	–0.15***	0.04	–0.17***	–0.07	0.17***	–0.14***	–0.13***
0.28***	0.52***	0.49***	0.32***	–0.26***	–0.18***	–0.40***	0.13***	–0.70***	–0.10	0.31***	–0.67***	–0.45***
0.06	0.50***	0.53***	0.34***	0.09*	0.02	–0.09**	0.11	–0.42***	0.01	0.40***	–0.45***	–0.25***
—	0.21***	0.13***	0.06	–0.33***	–0.05	–0.12**	–0.00	–0.23***	–0.14***	0.11**	–0.29***	–0.13***
	—	0.65***	0.29***	–0.01	–0.08*	–0.21***	0.05	–0.36***	–0.02	0.23***	–0.39***	–0.34***
		—	0.36***	0.04	–0.03	–0.18***	0.12**	–0.36***	0.05	0.25***	–0.35***	–0.32***
			—	0.02	–0.13***	–0.21***	0.23***	–0.34***	0.05	0.23***	–0.37***	0.32***
				—	0.35***	0.40***	–0.09**	0.27***	0.03	0.05	0.26***	0.26***
					—	0.54***	–0.11**	0.30***	–0.07	0.03	0.16***	0.43***
						—	–0.13***	0.56***	0.01	–0.02	0.38***	0.56***
							—	0.23***	0.22***	0.14***	–0.11**	–0.10**
								—	0.07	–0.25***	0.59***	0.50***
									—	0.17***	0.20***	0.02
										—	–0.13***	–0.11**
											—	0.38***
												—

Kladler, 2001). In the present study, the internal consistency was 0.86.

Results

First, correlations were computed (see Table I). The second step was testing the conceptual model (Figure 1) as a recursive path model. Blocks represent different variables and directed arrows indicate the hypothetical relationships (Kaplan, 2000). The Taylor and Aspinwall (1996) model distinguishes five levels of causal priority. At a first level, the exogenous variables are subsumed in the blocks *External Resources* and *Personal Resources*. At a second level are the endogenous block variables of *Stressor* and *Social Support*. At a third level, all variables from the lower causal levels influence *Appraisal*. At the fourth level except for Stressor all variables influence *Coping*. At the fifth level, Coping has a direct effect on *Psychosocial Outcome*.

Standard regression procedures could be used to estimate the path coefficients. However, 262 subjects out of 765 (34 per cent) had missing data on at least one of the variables, resulting in 4 per cent missing scores. Applying the Missing Value Analysis, procedure from SPSS showed that missingness did not exhibit any systematic pattern (Schafer, 1997). AMOS 4.0 (Arbuckle, 1997) allows for the full information maximum likelihood estimation of the parameters in case of incomplete data. A disadvantage of this approach is that the AMOS analyses do not provide descriptive fit indices since these are only defined for complete data sets with a fixed sample size. A confirmatory analysis showed that the model did not fit the data: test statistic = 425.49, degrees of freedom (df) 34 ($p < 0.001$).

Since the Taylor-Aspinwall model did not fit the data, we used a more exploratory backward elimination strategy to obtain model fit. This backward elimination strategy consisted of several steps. In order to obtain a fitting model for the data, we used a more exploratory strategy. First, we analysed the data according to a saturated model in which each observed dependent variable at Priority Level 2 was regressed on all the vari-

ables at a lower priority level. Note that, in doing so, we did not change the assumed causal order among the variables as expressed in the Taylor and Aspinwall (1996) model. In order to obtain a saturated model, we assumed that the error terms of dependent variables belonging to the same block were correlated. Based on the results of this analysis we eliminated the independent variables with an absolute *t*-value of their path coefficient smaller than 1.0 from that particular equation. By means of a series of similar consecutive runs in which the elimination criterion was systematically increased to a value of 2.0, we obtained per block per priority level an acceptable model. This resulted in eight models (see Table II). Finally, the selected variables were included in an overall analysis and we obtained an acceptable final model with a value of the test statistic equal to 117.72 for 98 df ($p = 0.085$). In this final model (Figure 2), the *t*-values of all independent variables that were retained in a path equation had an absolute value larger than 2.0.

Table II shows that the Stressor variables were predicted by External and Personal Resources. Workload and Work Pressure were both predicted by working many hours per week, not being hardy, being neurotic, being autonomous, being a Type A person, and scoring high on SI. Both Personal Resources and External Resources predicted Social Support. Especially being older and not having a partner predicted the perception of less Social Support. Stressor (Workload), Personal Resources, and Social Support predicted Appraisal, while External Resources did not play a substantial role. Being neurotic and experiencing a high workload were the main exogenous variables of Appraisal. External and Personal Resources, in various combinations, were important predictors of all coping styles. Social support only predicted Avoidance, while Appraisal predicted Task- and Emotion-oriented coping. Contrary to expectations, EE was not predicted by any of the coping styles. Instead, individuals with high scores on Workload and Work Pressure, who perceived a lot of stress, were emotionally exhausted.

Overall, in many analyses Emotional Stability, Extraversion, and Type A were the most important exogenous variables, as indicated by the high absolute value of the standardized coefficients. The percentage of explained variance was especially high in the models predicting Appraisal (61 per cent), Emotion-oriented coping (51 per cent), and EE (45 per cent).

Discussion

The results of the present study confirmed parts of the conceptual model of Taylor and Aspinwall (1996). Both external and personal resources predicted stressor variables. In addition to personal resources, external resources was related to social support, while the latter failed to predict appraisal. In line with the model, stressor variables, personal resources, and social support predicted appraisal. Both external and personal resources predicted coping, while social support and appraisal were only associated with some coping strategies. Instead of coping, two external resource variables, personal resource variables, stressor, and appraisal were related to emotional exhaustion.

The outcomes of testing the second level of the model, with stressor as its endogenous variable, confirmed the model. In addition to personality, external resources predicted social support. Especially younger men with a partner experienced much social support, supporting earlier findings (e.g. Antonucci & Akiyama, 1987; Mardsen, 1987). It appears that there is substantial empirical support to include an extra path from external resources to social support. Unexpectedly, external resources did not predict appraisal (see e.g. Brough, O'Driscoll, & Kalliath, 2005). Fathers and mothers with high work involvement had more control over both work and family domains (Duxbury & Higgins, 1994). In the present sample, almost half of the women and men had a college education and probably had high job involvement, which also could be a reason that women did not report more perceived stress than men.

The finding that coping failed to predict emotional exhaustion is the most fascinating outcome of this study. Concerning the relationship between coping styles and emotional exhaustion, inconsistent results have been found. Associations of emotional exhaustion have been found with various coping styles (Deary, Agius, & Sadler, 1996; Lee & Ashforth, 1996; Thornton, 1992). In contrast, Papadatou, Anagnostopoulos, and Monos (1994) found no relationship between coping and emotional exhaustion. There are several reasons that might explain these findings. Our general coping scale might not assess the types of stressor that respondents experienced as being the most intense or frequent. Second, certain coping styles may be effective in different parts of the fatigue process. Third, whether the

DOI: 10.1002/smi

Table II. Significant path coefficients of eight dependent variables.

Block	Variable	18	19	20	21	22	23	24	25
External	1. Gender		0.14***	0.17***		0.15***			
Resources	2. Age			−0.18***			−0.09*		
	3. Having children		0.09***			−0.14***			−0.08**
	4. Employment type	−0.08**						−0.06*	
	5. Marital status			−0.13***		0.15***	0.07*		
	6. Work hours	0.13***	0.09*						
	7. Being ill			0.07*					0.10***
Personal	8. Extraversion			0.23***		0.26***	−0.12**		−0.10**
Resources	9. Agreeableness				0.07**				
	10. Conscientiousness	−0.09*	−0.16***				0.19***		
	11. Emotional stability	−0.14**	−0.30***		−0.53***	−0.19***		−0.48***	
	12. Openness	0.14**	0.19***				0.31***		
	13. Strength of inhibition	0.12**	0.13***		−0.07*			−0.10***	
	14. Strength of excitation	−0.08*							−0.13***
	15. Mobility		−0.13***				0.08*		
	16. Hardiness	−0.14***	−0.17***	0.09*	−0.07**		0.12**	−0.15***	−0.11***
	17. Type A	0.31***	0.33***	−0.12***					
Stressor	18. Work pressure								0.17***
	19. Workload				0.32***		0.14***		0.33***
Social support	20. Social support				−0.10***	0.14***			
Appraisal	21. Appraisal						−0.15***	0.18***	0.13***
Coping	22. Avoidance-oriented coping								
	23. Task-oriented coping								
	24. Emotion-oriented coping								
	25. Emotional exhaustion								
	R^2	0.19	0.33	0.19	0.61	0.23	0.51	0.19	0.45

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

construct of coping has incremental validity when compared to basic personality traits is a question that necessitates future research. Superficially, the message of the present study is that coping does not add anything to our understanding of emotional exhaustion beyond personality. However, it should be kept in mind that the coping construct is not only characterized by pitfalls, but also by promises (Folkman & Moskowitz, 2003). One of the major challenges for coping researchers is to develop alternate models of coping assessment that surmount the many limitations of traditional coping questionnaires, such as unreliability of recall and confounding of items with their outcomes.

A possible limitation of our study is that work stress may be part of general perceived stress. However, the finding that each of the three variables, Work Pressure, Workload and Appraisal predicted EE indicates that they measure different aspects. Although a cross-sectional design has trouble deciding about cause and effect (Kaplan, 2000), these analyses are a good starting point in exploring important psychological associations in the study of stress, coping, and emotions as factors in health and illnesses. Finally, a remark has to be made about the search strategies. Search strategies such as backward elimination or forward (or stepwise) selection can not guarantee that the optimal subset of independent variables in linear regression analysis will be found (Miller, 2002). The only certain strategy for finding this optimal subset consists of performing systematically regression analyses for all subsets, and choosing the one with the largest squared multiple correlation coefficient (or a similar fit measure). This strategy, however, was not feasible for the present study due to the large number of potential independent variables.

Based on the present findings, substantial modifications to the outline of the Taylor and Aspinwall (1996) model need to be made, as the empirical findings only partially supported the model. Both theoretical and statistical considerations support adding a path from external resources to social support. More importantly, no association between coping and emotional exhaustion was found. Instead, the work environment as well as the personality of the employee was a critical factor in reporting EE. One should consider regularly including personality factors in work stress studies and stress-reduction training (e.g. Galantino, Baime, Maguire, Szapary, & Farrar, 2005). Future research, using other coping assessment techniques, should clarify whether the original Taylor and Aspinwall (1996) model, including coping, is superior to the revised model we propose in the present study. In addition to the introduction of new measurement approaches of coping, we would like to suggest paying more attention to the variety of stressful events people encounter in daily life. Stressor exposure as well as appraisal of stressors clearly differentiated from underlying personality traits that affect stressor reactivity, are core elements in the revised transactional stress-health model (Lazarus, 1999). According to Lazarus (1999), the differentiation of objective stressors and primary appraisal of stressful encounters will promote useful advances in testing the components of the transactional model. Recent studies have shown the incremental validity in predicting negative mood and physical health outcomes of the inclusion of detailed information regarding objective stressors in addition to scores reflecting the appraised meaning of stressors. For instance, Almeida, Wethington, and Kessler (2002) convincingly demonstrated that objective stressors were associated with health symptoms and mood. In line with Almeida et al. (2002), we state that designs striving at a more complete picture that includes the types of stressors individuals experience as well as the implications of the stressors for individuals, would pave the way for finding greater specification of health outcomes.

Acknowledgments

The present study was sponsored by grants from The Netherlands Organization for Scientific Research (NWO), Research Programme 'Fatigue at Work' Grant: 580-02-204 and Work and Organisation Research Centre (WORC) of Tilburg University.

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DOI: 10.1002/smi